

AMENDMENTS TO THE CLAIMS

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1. (Currently Amended) A ~~An air-cooled~~ discharge detector comprising:
- a sapphire gas discharge tube having an outer surface, the gas discharge tube having an exit opening at its discharge end;
- an enclosed air passageway having air entry and exit openings for movement of contained cooling air, the passageway being in contact with at least a portion of the outer surface of the gas discharge tube to form a cooling zone for such tube, the enclosed passageway terminating before the discharge end of the discharge tube;
- ~~an entry aperture for introducing air into the air passageway;~~
- ~~an exit aperture for allowing air to flow out of the air passageway; and~~
- an air source for supplying a flow of air into the entry aperture opening of the enclosed passageway for cooling the outer surface of the gas discharge tube; and
- a heater imparting heat to the gas sample in the cooling zone. ?

- ② (Currently Amended) The detector of claim 1 wherein the heater discharge is powered by radio frequency or microwave energy. }

3. (Original) The detector of claim 2 wherein the radio frequency or microwave energy is generated by a magnetron. *not shown in the drawings*

4. (Original) The detector of claim 3 wherein the radio frequency or microwave energy is introduced into a cavity defined by an inner wall, two side walls and an outer wall, and wherein the inner wall surrounds at least a portion of the gas discharge tube.

*medium
fluid
gas
gasroom*

5. (Original) The detector of claim 4 wherein the air passageway extends alongside at least a portion of an exterior of the side walls.

6. (Cancelled)

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7. (Original) The detector of claim 5 wherein the air source is an on board air pump.

8. (Original) The detector of claim 5 wherein the air source is a central compressor.

9. - 20. (Cancelled)

21. (New) A gas detector comprising:

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a gas discharge tube for carrying a gas sample from the detector, the gas discharge tube having an exit opening at its discharge end thorough which the gas sample escapes;

an enclosed passageway surrounding the gas discharge tube, such passageway having an input and exit for movement of contained cooling air supplied thereto, such gas coming in contact with the outer surface of the discharge tube to form a cooling zone along such tube, the enclosed passageway terminating before the discharge end of the discharge tube; and

a heater imparting heat to the gas sample in the cooling zone as the sample gas moves through the gas discharge tube.

22. (New) The gas discharge detector of Claim 21 wherein the enclosed passageway does not extend to the discharge end of the gas discharge tube.